



D I S C U S S I O N P A P E R

Do you need a WMS with AX?

You've Invested in AX. What's Your Next Step?

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Preface

You've invested in Microsoft Dynamics AX, but you find you need more. What is the next step – mobility, increased functionality, a WMS?

Most companies and their IT Teams can already list the direct benefits related to streamlining supply chain processes of manufacturing, warehousing and distribution – of being more efficient where the work actually takes place.

In minds and literature today, a warehouse management system (WMS) is most associated with the supply chain and is often considered the defacto next step after implementing an Enterprise Resource Planning system (ERP), like Microsoft Dynamics AX.

Companies can gain WMS-like benefits and advantages with AX but without the cost and intrusiveness associated with integrating a full-blown WMS.

Let's get right to the core of it. If you have AX and your company is considering a standalone WMS, this discussion paper outlines points you should know and an alternative that could save you money and complexity heartache.

In this informal discussion paper, we will

- Uncover the disadvantages to implementing a standalone WMS with AX,
- Share the benefits to using a WMS alternative, and
- Highlight the robust WMS-type functionality to be gained with AX + RF-SMART.

Initial Investment – An ERP

Most companies are running a full-blown ERP system in order to effectively scale and grow their businesses. Any company that has a substantial number of shipments from a distribution facility has most likely thought about automating its warehouse and shipping functions as well.

The total cost of owning AX is, in itself, a substantial investment and is determined by the costs associated with its initial implementation including any modifications and add-on integrations; the ease of adapting the system to changing business requirements; and the costs of ongoing maintenance and future upgrades. These costs are counter balanced by the business benefits of a more efficient operation and increased customer service.

If you are considering taking the next step in automation – adding mobility and more WMS functionality – you can be inundated by information from WMS vendors, consultants and alternatives. Each one making a case on how you should spend your limited project and budget resources on their product.

Do You Really Need All That?

Companies frequently purchase an entire WMS when they only need certain features, or only need certain functionality to really optimize their warehouse operations. And often, the bells and whistles

offered by a WMS distract from the true need for core warehouse functionality to be strong and efficient; solid and stable.

While many companies do not need a full-blown WMS, most do need mobility and at least some additional functionality.

Advantages and Challenges of a Standalone WMS

Although challenging to implement and maintain, companies choose a standalone WMS to fill perceived ERP functionality gaps and gain business benefits which can include:

- Increased inventory accuracy because of better inventory management
- Increased productivity with workflow controls and task management
- Increased visibility and communication along the supply chain
- Improved shipping accuracy
- Increased order accuracy
- More timely order fulfillment
- Reduced direct operating costs
- Increased overall revenue
- Increased customer satisfaction

A typical standalone WMS performs complex calculations to optimize your warehouse layout and product flows. There is no doubt that some operations can benefit from very complex cubing and slotting calculations.

However, there are multiple drawbacks to integrating a stand-alone WMS with AX, not the least of which are high implementation costs, and ensuing data discrepancies from having data duplicated / data synchronized across two databases.

In the end, the above listed WMS benefits can be offset if you have to gut AX to integrate the external WMS. And, WMS-to-AX system integrations that depend on batch updates lead to inaccurate information and out-of-sync operations. Below is a short list of disadvantages to keep in mind:

WMS Implementation Disadvantages

- Initial system and implementation costs are high, and can even rival your AX investment
- Time and complexity to implement – involves painfully detailed requirements
- AX needs modification – sometimes even gutting AX and building logic outside of AX

WMS Ongoing Disadvantages

- There is not one clear system of record which causes data discrepancies and synchronization issues
- No real-time field-level validation against AX – transactions are validated against information such as sales orders that are hours old and might have changed
- Maintenance and support of a complex system – a WMS is a large, complex and data intensive application that requires ongoing care and feeding

In addition, specific WMS-to-AX integration problems can stem from the logic of the WMS being outside of AX – you’re taking a lot of the business logic out of AX and then force feeding business logic from an external system back into AX. Some of the resulting problems can include:

- Data synchronization challenges and discrepancies from AX to the WMS. There are a number of attributes for inventory that represent customer-specific information as well as the business process/rules they must fulfill, such as “ship to/bill to” addresses or whether a company prepays for its shipments. If the data in one system is different than the data in another, it will most likely cause a discrepancy between the two systems. And this could cause work to stop while someone identifies and resolves the issue.
- Discrepancy in the inventory balance from a number of issues that then requires manual intervention.
- Managing order assembly and packing requirements can become problematic.
- Difficulty using advanced AX features such as advanced planning for production because an external WMS tries to be the lead source of data.
- Difficult to add on other solutions, for example, changing the base objects in Dynamics AX can hinder a company’s ability to leverage other value-added solutions for AX.

You Can Have It All: An Alternative’s Benefits and Advantages For Dynamics Ax

For a large number of companies, it is better to take advantage of AX by integrating an ISV add-on solution that fills in the functional gaps and adds value to AX, like RF-SMART’s robust RF data collection solution.

There are three helpful keys to determining a viable alternative to a full-blown WMS –

1. gain the mobility and functionality your company needs,
 2. avoid the list of risks that come with standalone WMS add-ons, and
 3. avoid unnecessarily high costs.
- ✓ First, functionality. An alternative such as RF-SMART can provide WMS-type functionality and therefore similar benefits as a WMS. The below benefits can be gained from RF-SMART and are the same as those noted for a WMS:
- Increased inventory accuracy because of better inventory management
 - Increased productivity with workflow controls and task management
 - Increased visibility and communication along the supply chain
 - Improved shipping accuracy
 - Increased order accuracy
 - More timely order fulfillment
 - Reduced direct operating costs
 - Increased overall revenue
 - Increased customer satisfaction

Underneath the covers of these benefits are several foundational requirements including the absolute necessity of real-time integration with and validation to AX. Real-time, field-level validation against AX is what ensures the inventory accuracy, order accuracy, visibility and other benefits.

What can this mean in your facility? If you are on the floor transacting against a sales order and someone in the front office changes the order, you need to see the change immediately. If you are transacting against older, downloaded data, you unknowingly will create errors that are compounded throughout the work shift.

- ✓ Second, avoid the risk. A WMS alternative should leverage your core investment in AX without creating additional risks by:
 - Not changing objects in AX or otherwise be overly intrusive into AX
 - Not duplicating your ERP data in a second and conflicting database
 - Enabling real-time updates to AX avoiding synchronization issues
 - Providing simpler implementation and AX integration with low to no maintenance
 - Simplifying upgrades for your AX investment

- ✓ Third, an alternative should be significantly lower than the total cost of a standalone WMS or your AX investment.

RF-SMART's total cost is typically a lot less than a standalone WMS – always less, but often substantially so. You won't have to buy an entire warehouse management system when you just need certain capabilities, and RF-SMART decreases your time and cost when you upgrade AX in the future.

Why Consider AX + RF-SMART?

RF-SMART's proven integration to AX extends it into the realm of advanced warehouse management, and does it transparently. AX considers RF-SMART transactions as if they are from within AX which inherently side-steps many of the risks that come with a standalone WMS.

All RF-SMART warehouse transactions are performed in real-time so you are confident that information is being updated in Dynamics AX immediately and warehouse/production users also know immediately whether the transaction was successful. You won't have to maintain duplicate data in a WMS and then worry about keeping that data synchronized.

The RF-SMART product team has deep, proven experience with AX, and with each RF-SMART product release has maintained its mantra to "make no changes to AX." And, RF-SMART is very robust out of the box. This combination ensures simpler setup and configuration, simpler ongoing operations and simpler AX upgrades.

In a very complex scenario such as a 3PL, the detailed calculations and complexity of a WMS application can be required to make that warehouse function beyond RF-SMART with AX Distribution capabilities.

But many companies can optimize their warehouse just by leveraging their AX investment and adding RF-SMART automated data collection with real-time integration and validations to AX.

Below are two very specific examples of extending AX with RF-SMART.

Example One – Picking/Outbound Dock

One example of fully using standard AX and extending it with RF-SMART is commonly used in setting up a RF-SMART picking process. The key is filtering by outbound dock. At a high level, it works like this.

Let's assume a simple scenario where a company loads orders for three large customers for Wednesday afternoon pickup. The company can assign one picker to each of the three customers, and assign each of those customers to an outbound dock. Each picker is directed simply through their customer's pick, validating as they go and updating AX in real-time.

Of course, there are myriad variations of this same scenario that can be setup for your warehouse with RF-SMART. For example, you could assign multiple customers' orders to a dock and/or combine orders on a truck. Or, you could group orders by certain criteria. Some customers use this to break up shipments by type – assigning pickers to prepare either UPS or DHL shipments.

Example Two – Automated Replenishment

The above picking example illustrates maximizing standard AX to build more capability and a more optimized warehouse. With RF-SMART's advanced logistics features, you can take AX to its utmost extent. Example two illustrates replenishment which many companies consider out-of-reach functionality for their warehouse.

Using RF-SMART's advanced logistics feature, you can create a replenishment process – adding no tables to AX – to automatically bring forward reserves when stock quantities reach a certain threshold. During normal picking, this process determines if you've hit the threshold and an item transfer journal is created telling you what type of stock is needed and exactly where. While that replenishment is being executed, AX has moved the item(s) from your reserve storage or bulk area to your forward pick area.

This and many other advanced capabilities can be achieved with AX + RF-SMART.

A Case in Point: A Standalone WMS Brings a Customer to its Knees

One of RF-SMART's customers previously encountered major problems implementing a standalone WMS and shared their experience.

According to the company, the installed WMS product failed because it was completely outside of AX and duplicated the data causing constant data integrity battles. The company was maintaining inventory in AX to do certain AX functions, while also maintaining inventory in the WMS database.

“It was difficult enough to keep inventory accurate in one location, one database, one source,” said a manager at the company. “Much less synchronizing to two databases. We wanted one version of the truth which needed to be AX.”

Often, the standalone WMS wouldn't allow changes to orders that it had downloaded from AX. And, sometimes the company's sales and purchase orders wouldn't download from AX to the WMS. Sometimes the WMS was down or had to be rebooted, and in the process took down other AX functions in the company. The WMS could not be clustered, nor could it be set up with failover capability.

"We really discovered that we don't need the bells and whistles of a WMS because AX does even more than we need if we extend that execution out onto the floor," he said.

"We didn't want to be held hostage by a database separate from AX. That was a key selection driver for choosing RF-SMART because it works as a part of AX," the manager said. "RF-SMART is transparent to AX. It extends AX out to where the work happens. I feel like I have more control when more of the features and variables are within AX."

The manager concluded: "We're very pleased now with how AX handles our inventory and our shipping and our production work. And, if I do have to do a customization, I don't have to call in a third party developer working in another language. These are the bottom line reasons why companies will pick and should pick RF-SMART over a very intrusive third-party WMS."

Conclusion

With a WMS alternative such as RF-SMART, companies can really maximize and extend the existing WMS capabilities of AX without the complexity. The AX + RF-SMART combination is a good alternative to explore before you purchase a standalone WMS. You may save hundreds of thousands of dollars, minimize the complexity of your IT infrastructure, pave the way for significantly easier AX upgrades and reduce risks associated with duplicate data.

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